TURF PESTS AND DISEASES, AND HOW TO TREAT THEM

Refer to *Six Point Garden Program,* p. 4, Controlling Diseases and Pests for Integrated Pest Management (IPM)

1. INSECTS

- **White grubs**, the most common of sub-terrain larvae, come in 3 types of Scarab Beetles – **Japanese Beetle** introduced in 1960s, **May or June Beetle,** native and nocturnal, and the **European Chafer** introduced in 1990s to southern coastal areas.
- The **feeding cycles** for all three are similar – The grubs hibernate under the grass roots from November to March. **In April to June**, the grubs rise to feed on grass roots. The grubs pupate to adults in June and feed above ground during **July and August** on such host favorites as Linden, Maple, Birch, Mountain Ash and Oak trees; fruit trees such as Apple, Cherry, Peach and Plum trees; perennials such as Roses and a host of others. **In September** the adults lay eggs that hatch into white grub larvae and begin eating the roots before descending in October to over-winter
- **Damage** is indicated by a drought stressed wilted appearance and off-color irregular patches. Monitor the presence by exposing a one-foot square section of lawn 2"- 3" deep in August, and wet the area. An infestation[1] would have to exceed ten bugs/ 1 sq. foot area.
- **Treatment: Adults** – Hand pick **July/ August**. Remove preferred host plants. **Grubs-** Apply live biological controls such as **Hb Nematodes** (cruisers) for the root feeding months of **May/ June** and **September/ October**.[2] Though there are timing, dispersal and storage constraints, nematodes are considered more effective in Maine than the more commonly recommended applications of Milky Spore.
- Other bugs**: Chinch Bugs** larvae feed by sucking juices from the leaf sheaths of grasses from June, July and August. Natural occurring predatory beetles such as Big-Eyed Bugs control chinch bug outbursts effectively. If not, de-thatch by raking and seed with endophytic[3] seed cultivars.

2. DISEASES

- There are two types: **Noninfectious diseases** caused by culture problems and **Infectious diseases** or pathogens (fungi, bacteria, and viruses) that thrive in hot/ moist conditions, especially in August, and spread from plant to plant. Fungi diseases are the most common. Examples are: Crown and Root Rot, Fairy Ring Fungus. Pink and Grey Snow Molds, Leafspot, Necrotic Ring Spot, Pythium Blight, Summer Patch
- **Damage:** Noticed on stems, leaves and especially new growth in July/ August. These take the form of galls, spots, blights, molds, stem rot and mildew.

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[1] This concentration represents an **Action Threshold** and indicates treatment

[2] Source: www.greenmethods.com

[3] It is a fungus within the grass plant, secreting substances that repel insect pests. Available in fescue and ryegrass varieties only.

- **Treatment:** There are three basic approaches:
  - **Resistance-** Select resistant seed mixes Refer to p. 3 ***Six Step Best Garden Practices*** .
  - **Avoidance-** Practice the ***Six Point Best Garden Program*** as a preventative measure for both types infectious and non-infectious diseases.
  - P**rotectants-** Biological organisms that interfere with germination and growth behaviors of the pathogens e.g. Nematodes.
  - Other treatments include: Applying compost tea to enhance the plant's nutrient uptake that increases natural resistance and suppresses the disease. (See Six Point Best Garden Program, p. 3)
- **Environmental corrections-** to reduce hot moist air and bad air circulation by spacing plants further apart .

Note: To date, research on **Infectious Diseases** [4] has been mainly confined to a few marketable crops.

3. WEEDS[5]

- **The goals for control are:** Understand weed biology, remove the conditions that favor weeds, encourage desirable plants to out-compete weeds, and utilize sound cultural practices.
- **Types of weeds: Grass-like** divided into: Annuals propagated by seed**,** Perennial propagated by seed and vegetative means (rhizomes) and **Broadleaf Weeds** divided into: Annuals propagated by seed, Biennials that form rosette leaves close to the soil the first year and flower and seed the second year by seed and vegetative means (bulbs, tubers, rhizomes) and Perennials propagated by seed and vegetative means.
- **Examples under the above categories:**

  Annual grass sp. Crabgrass, Annual Bluegrass
  Perennial grass sp. Bent grass, Timothy, Orchard grass
  Annual broadleaf sp. Knotweed, Chickweed, Pigweed, Purslane
  Biennial broadleaf sp. Burdock
  Perennial broadleaf sp. Plantain, Dandelion, Cinquefoil, Speedwell

- **Treatment:**

1. **Apply Six Point Best Garden Program** to keep desirable plants healthy, and ameliorate the conditions that weeds thrive on such as damaged and disturbed areas, compaction, bare soil, walkway-edges and overuse**.**
2. **Physical controls-** hand-pull **before flowers form**. Use trimmers and mowers
3. **Avoid cultivation after seeding takes place** to curtail latent seed growth
4. **Mow frequently**
5. **Alternative choice:**

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[4] Sources: Soil and Water Conservation District: www.cumberlandswcrd.org and Google *Maine School IPM Manual*

[5] A weed is an unwanted plant growing where it is not desire

If there is a lack of sun hours or a case of over-use, consider replacing the affected area with native plants species, or removing the sod and covering the area with eight (8) inches of gravel or crushed rock, covered by pine bark mulch, for example. (Remember to remove and save all topsoil)

Note:
To remove (kill) turf, cover with six layers of newspaper and lay six (6) inches of recently cut grass clippings consisting of a 50:50 mix of woodchips (brown) and grass clippings (green) on top. This layer may or not be composted. Prepare in the fall, leave over winter, and it will be ready to replant in the spring. **Do not** dig up grass sod and pile in a heap, since noxious gases can build up.